

IN THE CLAIMS

The following listing of the claims is provided in accordance with 37 C.F.R.

1.121:

1. (currently amended) A temperature monitoring system configured for measuring temperature of a battery assembly, the temperature monitoring system¹ comprising:

at least one optical temperature sensor disposed inside the battery assembly configured for measuring the temperature of at least one portion of the battery assembly and generating a measured temperature signal representative thereof;

an optical cable coupled to the sensor and configured for transmitting the measured temperature signal;

battery temperature monitoring circuitry coupled to the cable and, configured for monitoring the measured temperature signal from the at least one portion of the battery assembly;

battery temperature control circuitry coupled to the battery temperature monitoring circuitry and configured to generate a control signal based upon the measured temperature signal; and

a battery charging device coupled to the battery temperature control circuitry and configured for charging the battery assembly based on the control signal.

2. (canceled).

3. (canceled).

4. (original) The temperature monitoring system of claim 1, wherein the battery assembly comprises a plurality of battery modules, wherein each battery module further comprises a plurality of batteries, the battery temperature monitoring circuitry being configured to monitor temperature of at least two battery modules or the batteries.

5. (original) The temperature monitoring system of claim 1, the optical temperature sensor comprising a Bragg grating structure etched onto an optical fiber.

6. (canceled).

7. (canceled).

8. (original) The temperature monitoring system of claim 1, wherein the battery temperature monitoring circuitry comprises:
a laser modulation device configured for generating a laser trigger signal;
reference circuitry configured for generating a reference signal;
measurement circuitry configured for providing at least one measurement signal of at least the portion of the battery assembly; and
a plurality of fiber optic couplers configured for splitting the laser trigger signal, the fiber optic couplers coupling the laser modulation device to the reference circuitry and the measurement circuitry.

9. (original) The temperature monitoring system of claim 8, wherein the measurement signal comprises a temperature measurement and a location indicator.

10. (currently amended) A method for monitoring temperature of a battery assembly, the method comprising:
optically measuring temperature of at least one portion of the battery assembly via an optical temperature sensor disposed inside the battery assembly;

transmitting a signal representative of the measured temperature; and
monitoring the temperature signal; and
controlling a charge in the battery assembly based on the a monitored temperature.

11. (canceled).

12. (previously amended) The method of claim 10, wherein the step of monitoring comprises
generating a laser trigger signal and a reference signal;
generating a plurality of measurement signals based on the measured temperature;
generating a control signal based on the reference signal and the measurement signals for controlling of the charge in the battery assembly.

13. (canceled).

14. (canceled).

15. (currently amended) An optical temperature monitoring and control system configured for measuring temperature of a battery assembly, the temperature monitoring system comprising:
an optical temperature sensor assembly disposed inside the battery assembly comprising a plurality of sensors configured for measuring the temperature of at least one portion of the battery assembly; wherein the battery assembly comprises a plurality of battery modules, wherein each battery module further comprises a plurality of batteries;
an optical cable coupled to the sensor assembly configured for transmitting a signal representative of the measured temperature;
battery temperature monitoring circuitry coupled to the sensor assembly and configured for monitoring the measured temperature of the portion of the battery assembly;

battery temperature control circuitry coupled to the battery temperature monitoring circuitry and configured for generating a control signal based on the measured temperature; and

a battery charging device coupled to the battery temperature control circuitry, configured for charging the battery assembly based on the control signal.

16. (canceled).

17. (original) The optical temperature monitoring and control system of claim 15, wherein the optical temperature sensors comprise a Bragg grating etched onto the optical fiber.

18. (canceled).

19. (canceled).

20. (currently amended) A method for optically monitoring temperature and controlling the charging of a battery assembly, the method comprising:

optically measuring temperature of at least one portion of the battery assembly via an optical temperature sensor disposed inside the battery assembly;

transmitting a signal representative of the measured temperature;

monitoring the temperature of the portion of the battery assembly via the signal; and

controlling a charge in the battery assembly based on the measured temperature.

21. (currently amended) A system for monitoring temperature of a battery assembly, the system comprising:

means for optically measuring temperature of at least one portion of the battery assembly via an optical temperature sensor disposed inside the battery assembly;

means for transmitting a signal representative of the measured temperature;
means for monitoring the temperature of the portion of the battery assembly via the
signal; and
means for controlling a charge in the battery assembly based on the measured
temperature.